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THE
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Poetry.

Acrostic.

S cience, yes science, what pleasures untold
C oncentrate to hallow the glorious word:
I n courts of proud kings, round mountains of gold,
E ven down the damp mines, or where'er it is heard,
N one shall turn away deaf, but all echo the same,
T ill Sol shall grow old and the Earth become lame.
I n mind of the school boy it soon shall find room,
F ire up with new zeal his bold search for the truth,
I nvest with new beauties the anvil and loom,
C orrect the gross errors and foibles of youth.

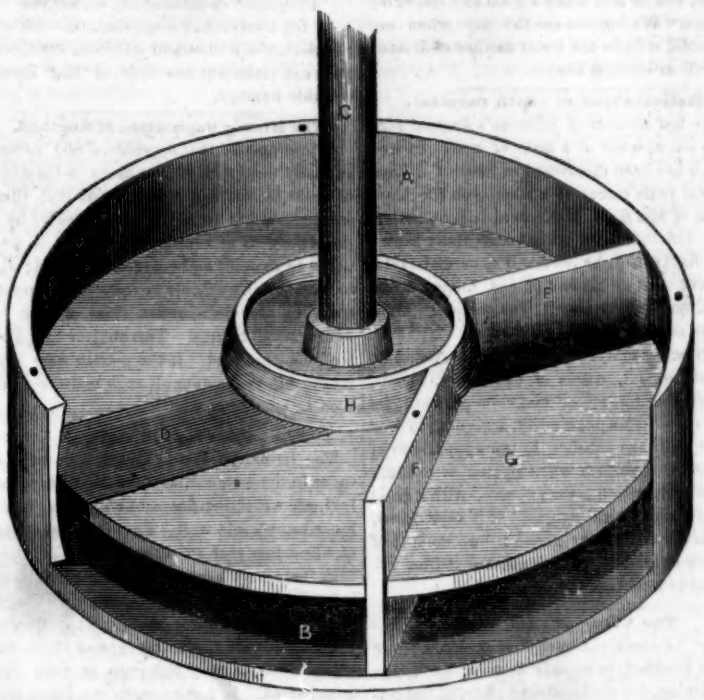
A rt, handmaid of science can with her be found
M eting out in full numbers whate'er she decrees;
E nslaving broad rivers; tearing up the hard ground;
R ushing through the dark tunnel; defying rough seas;
I mpatient of steam flitting mountain and vale,
C alls down the swift lightning to leap the long wire;
A nd restless the moment a triumph grows stale,
N o limits will give to her faith or desire.

Bridgewater, May, 1849. O. A. J.

THE OLD MAN'S REVERIE.

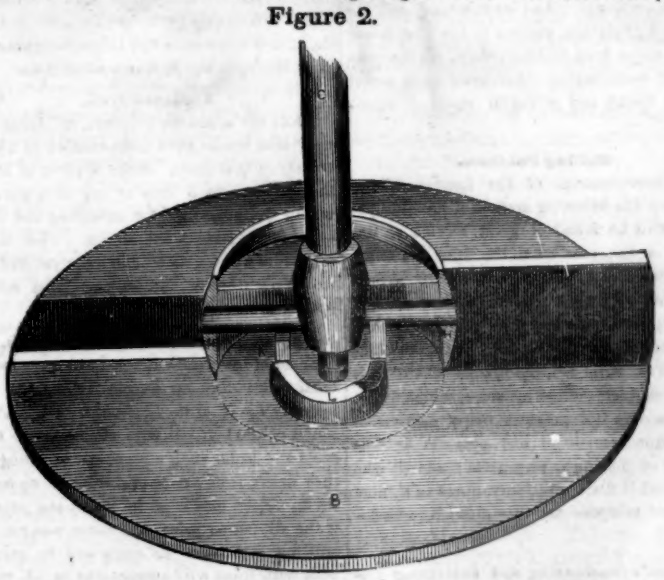
Scoth'd by the self-same ditty, see
The infant and the sire;
That smiling on the nurse's knee,
Thus weeping by the fire;
Where, unobserved, he finds a joy
To list its plantive tone,
And silently his thoughts employ
On sorrows all his own.
At once it comes, by memory's power,
The loved habitual theme,
Reserved for twilight's darkling hour,
A voluntary dream;
And as, with thoughts of former years,
His dimming eyes o'erflow,
None wonder at an old man's tears
Or seek his grief to know
Think not he dotes, because he weeps:
Conclusion ah how wrong!
Reason with Grief joint empire keeps,
Indissolubly strong;
And oft in age a helpless pride
With jealous weakness pines,
To second infancy allied,
And every wo refines.
He ponders on his boyish years,
When first his race began,
And oh, how wonderful appears
The destiny of man!
How swift those gladsome hours were past,
In darkness closed how soon!
As if a winter's night o'ercast
The brightest summer's noon.
His withered hand he lifts to view
With nerves once firmly strung,
And scarcely can believe it true
That ever he was young,
And as he thinks o'er all his ills,
Disease, neglect, and scorn,
Strange pity of himself he feels,
Thus aged and forlorn.

FEATHER BUCKET WATER WHEEL.---Figure 1.



This wheel is the invention of Mr. A. P. Conant of Fitchburg, Mass., which we noticed in No. 36, page 284. It embraces some novel features which will be more clearly understood by reference to the accompanying engravings. Fig. 1 is a perspective view, and fig. 2 a view of the interior. The same letters indicate like parts. A, are the sides of the wheel. They are cast in one piece along with the bottom, or they may be made separate, but bolted together water tight. G, is a disk or circular plate which fits snugly into the sides A, and forms a water tight chamber B, between it and the bottom of the wheel, and it also forms a water tight chamber between it and the top plate or cover of the wheel, which is left off in the engraving, for clearer explanation. C, is the main shaft secured to the convex hub H, to which the disc G, is firmly united. By moving the disc therefore, the hub and the shaft C, receive motion. The sides, top and bottom are stationary. The way in which the shaft is revolved is as follows: D E, are two arms or blades which are secured to an axle passing through the hub H, of the main shaft. These blades are made to feather or change positions at right angles with the disc G, at certain points

Figure 2.



and then resume a position on the same plane with the disc and forming part of it when passing from the point where the water is discharged to the point where the water is led to act for propulsion on the wheel. The way in which this is accomplished is by a stationary cam L, fig. 2, which has an incline on each side and which, as the blades revolve operate the cams K J, on the axle of the blades, to turn or feather as it is called, the blades as represented in fig. 2. The inner ends of the blades are convex, and they fit to move tight in the water chambers of the the wheel. F, is the stationary water division. It has a slit cut through it to allow the disc G, to pass freely without any back resistance of the water. The blade D, lies on the same plane with the disc when passing through the opening in F.

If the water was admitted into the chambers B, at G, fig, 1, and allowed to pass freely round, and then discharged at B, on the left side of F, fig. 1, no motion whatever could be communicated to the shaft C. But if the water chambers are filled up with a resisting medium attached to the shaft, the water will act on that resisting medium to propel the shaft to which the said resisting medium is attached. This is one principle of the wheel; but it has another, viz: to present this resisting medium to the force of the water until the disc G, has nearly completed a revolution, when the resisting medium is removed and the water allowed to escape as represented.

RAILROAD NEWS.

Hudson River Railroad.

The Hudson River Company has made a contract in England for wrought iron wheels for their cars, which will enable them to pass over the route at English speed—about fifty to sixty miles an hour. The road is expected to be open some time during the month of July along part of the route.

New England Accumulations.

The Boston Atlas states the whole cost of Massachussetts railroads, thus far, at about $47,000,000. Most of this has been expended within the last fifteen years, and probably three-fourths of the amount has been furnished by Boston. Where did the money come from? There are no gold or silver mines in the Bay State. England and Pennsylvania furnished the iron for these roads, and, for aught that appears, have been fully paid.

Pennsylvania and Ohio Railroad Company.

The Treasurer of this Company gives notice through the Pittsburg papers that an instalment of $5 per share will be required from subscribers by the 15th of July next.—The contracts for the first 20 miles of the road are to be given out on the 30th proximo.

At the present moment the Railroad between Cincinnatti and Cleaveland on Lake Erie is being pushed forward with considerable energy, and in view of the suspension of Lake Erie navigation during the winter season, the people of Buffalo think that a Railroad between the two places will soon be an imperative necessity. The project is now before the people of that City, and it is hoped that a Company will soon be organized to construct the road.

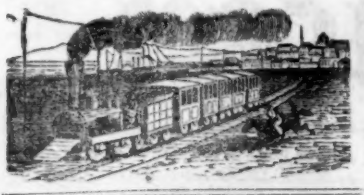
The Ballston Railroad Disaster.

John Tallmadge, a farmer residing in the immediate vicinity of the railroad disaster, was arrested on Friday the 25th ultimo, on complaint of L. R. Sargent, Esq., Superintendent of the Renssalaer Railroad Company, for willfully and maliciously placing stones upon the track of said Railroad on the morning of the 24th inst, by which the locomotive, tender and baggage car were thrown from the track, and literally crushed to pieces; and seriously injuring the engineer Mr. Dodge, and Mr. Cronk, the fireman. The facts brought out on the examination of the prisoner were overwhelming against him.—He was held to bail in the sum of $3000 to appear at the next Oyer and Terminer, which sits in August next. The persons injured are yet alive, but in a very critical condition. The Physicians think they may possibly recover.

A Southern Factory.

The Mississippi Manufacturing Company at Draine's Mills, Choctaw county, is now in successful operation yielding a large dividend. It has now 500 spindles in operation, which consumes daily 300 pounds of Cotton, and turn out 280 pounds of spun thread. The cost of the cotton consumed every day is $15, other expenses 10; making in all $25. The manufactured article sells readily at 20 cents, making the whole product of the spindles $56 per day.

The great ceiling of St. George's Hall, Liverpool, is just finished. Its span is seventy five feet. The arch is turned with hollow tiles, which weigh six hundred tons, one thousand four hundred tons less than if it had been constructed of brick.



Treatment of the Cholera.

Mr. Editor.—In the Tribune of the 2d inst. is a long article in the form of an advertisement, from the pen of Dr. Brandreth. The article is a criticism on the Report of the Surgeons related to the Board of Health in this city. Their report recommended the use of opium. He condemns it and recommends, as is very natural, "Brandreth's Pills." Those pills are of undoubted virtue to the author of them, and the wonder is, that any person can be so stupid as to die, when such a thing as "Brandreth's Pills" are in existence. All the information we have of the Cholera, or any other infectious disease, is very limited. Who can tell what the subtile poison is that pollutes the fountain of health—what poisonous ether that changes the red current of life to the turbid pale tint of death. Who can tell but the poison of the disease would only receive fuel from a Brandeth Pill. Experience is the guide—and opium or arsenic may be safely and well applied for some diseases.

The same treatment that would answer for one might be injudicious treatment for another. In the genius and judgement of the physicians, much confidence must be placed.

The premonitory symptoms generally, though not invariably, observed, are headache a furred tongue, nausea, diarrhœa, with more or less uneasiness, if not pains, in the bowels, and at times a cramp in the legs.

These, at times, quickly assume the appearance of a severe attack, vomiting and purging becoming frequent, and soon followed by the characteristic symptoms. Hence the necessity for prompt attention, in even slight derangement of the bowels, during the existence of an epidemic atmosphere.

As many modes of treatment, prescriptions of this and that nature, have been brought before the public, I do not mean to say a word about one of them, only to recommend a warm bath which should be given as soon as possible. The patient should also have a small piece of ice applied between his lips. This mode of treatment I have not noticed in any public paper, and from a knowledge of its simple efficacy I have from pure motives, as I have no pills to sell, presented it to the public. J. W., M. D.

New York.

The Magnetic Telegraph.

The U. S. Gazette says House's new line of telegraph, which is to connect New York with Boston, has been completed from the latter place to Providence, and it is believed that it will be in operation the whole length by the 1st of July next. It is built in the most perfect manner. The wire on the Halifax and Amherst line is proceeding with great vigor. A Mr. Hildreth, of Lockport, has completed a model for a telegraph line, the wires of which are to be laid in iron pipes under the ground. The expense of a single wire is set down at $200 per mile.

[As we have had a number of communications about the isolating of telegraph wires, by laying them down in tubes, we would state that the first telegraph in England, was laid down in glass tubes. A plan for isolating in lead tubes is illustrated in Vol. 3 Scientific American.

Average Income of Man.

By Mr. McCulloch we learn that the average income of every person in England is £16 a year, or about 22 cents a day; and for every person in Ireland £6 a year, or 8 cents a day. Chevalier's admirable Lectures on French Political Economy, estimates for each person in France about $15 a year, or 12½ cts. a day. Our own census estimates the average product of the richest State in the Union $100 for each person or 30 cents per day, while the whole country taken together, Slave States and all, yields an annual product of but $62 for each person, or about 17 cents per day.

The distribution of this is far more equal in this country, however, than in any other.

Arrival of Mr. Alexander Bain.

Mr Bain, inventor and patentee of the Chemical Telegraph, arrived from Liverpool on Saturday by the Niagara, with a great variety of beautiful telegraph machinery, to be used as models by mechanists, and has improved his composing machines so that a boy or girl can compose the Telegraph Messages at the rate of 100 to 140 letters per minute, instead of 45 as formerly. He has also introduced many minor improvements in the transmiting and receiving machines, which so facilitates operations as to leave nothing to be desired. Mr. B. has closed his affairs in England, and it is probable he will make America his future home, and he will make a good and respected citizen. We hope to see the day when our Republic will be the foster mother of Science as well as rational liberty.

Meteoric Iron in South Carolina.

The last number of Silliman's Journal contains an account of a mass of meteoric iron which has been discovered in South Carolina, several years since, by a laborer on the plantation of Mr. S. M. McKeown, in the Chesterfield district. On being accidentally shown to a blacksmith, he proved it to be malleable, and out of it he made a pair of hinges, a few nails, and a horse shoe. The original weight of the mass was thirty-six pounds.

On being analyzed, this iron was found to contain nickel, traces of chromium, cobalt, and nebular masses of magnetic pyrites. Its most remarkable peculiarity, according to Professor Silliman consists in the appearance of the polished surface when treated with dilute nitric acid, which is then covered with a great variety of beautiful figures. It is very dense, and takes a brilliant polish: but its etched surface immediately distinguishes it from every other iron hitherto described.

The Value of Cold Water.

The Louisville Courier says.—"We are much gratified to be able to state that Judge Mc Kinley, the distinguished jurist of the Supreme Court of the United States, after having his vision so seriously impaired for fifty-two years that he could not see without glasses has recovered his sight so perfectly, that he is now able to read without glasses. For half a century this faculty was so seriously impaired that without glasses he was almost blind. It is the recovery of his constitutional health, by which the sight has been reinvigorated.—Judge McKinley very properly ascribes it to the daily use of cold water on the head and surface of the body. Of the importance of the use of cold water in maintaining and restoring health, no one who has ever tried it can entertain a doubt. And we refer to Judge Mc Kinley's gratifying success in the restoration of his vision from its long sleep, for the purpose of encouraging other invalids to resort to this cheap and powerful mode of medication."

Boiling Potatoes.

A Correspondent of the London Times says,—"The following method of dressing potatoes will be found of great service at this season of the year when the skins are tough and potatoes are watery: Score the skin of the potatoe with a knife lengthways and across quite round, and then boil the potatoes in plenty of water with salt, with the skins on. The skin readily cracks where it is scored, and lets out the moisture, which otherwise renders the potatoes soapy and wet.—The improvement to bad potatoes by this method of boiling is very great; and all who have tried it find a great advantage in it, now that good potatoes are very difficult to be obtained."

Ericsson's Condensing and Distilling Apparatus.

Extract from the journal of Capt. James C Baker, commanding U. S. transport steamer "Alabama," on her voyage from New Orleans to Chagres and back, in March, 1849:

The condensing apparatus for making fresh water for the use of passengers and crew works admirable, furnishing 1,200 gallons, if necessary, per twenty four hours, enabling us to dispense with at least 3,000 gallons of water, which weight can be carried in fuel or cargo. We drank this water from choice during the whole voyage; it is as clear as the purest spring water.

Population of the World.

The last estimate of the world is as follows:

Asia,	585,000,000
Europe,	234,000,000
Africa,	110,000,000
America,	50,000,000
Oceanica,	21,000,000
Total,	1,000,000,000

Of this number there are:

Heathen,	600,000,000
Mahomedans,	140,000,000
Jews,	10,000,000
Roman Catholics	130,000,000
Greek Church,	55.000,000
Protestant denomination,	65,000,000

By the above table it appears, that out of a population of a thousand millions, the Christains can claim but one fifth of that inconceivable number.

The Mining Population of England.

It is estimated that upwards of 800 persons annually meet with violent death in the mines of Great Britain and it is believed that these accidents might be nearly all prevented by a proper system of ventilation, &c. It is proposed to appoint an Inspector of Mines; also to have mining schools or some other arrangment to provide a better class of men for underground bailiffs. This subject has been too long neglected. If the people were represented in Parliament all such matters would soon be efficiently attended to.

The Crops in Ohio.

The farmers in Preble County, as well as those in the whole Miami and Mad River valleys, are expecting fine crops. The wheat looks remarkable well. There are more acres of wheat this year in this portion of Ohio, than there have ever been before. We are informed by farmers that the late cold "snap" did not effect the apple crops. The peaches and cherries are much less injured than was anticipated. A good half crop of both may be expected. In Lake county the peach crop will be very large.

Magnetism.

The remarkable discovery has been made that all substances whatever are magnetic or dia magnetic; and that some, such as gold, silver, point East and West. Even the gases, and the flames of burning bodies, are subject to magnetic influence, and what, in a scientific point of view, is still more interesting, a relation has been found to exist between magnetism and light. The magnetic needle has also been discovered to be subject to violent agitations and disturbances, and that these disturbances occur at the same instant of time on every side of the globe—at Toronto in Canada, at the Cape of Good Hope, at Sidney in New Holland, and in Europe and Asia.

Alabama Iron.

From the Alabama Planter, we learn that new iron works have been erected in Shelby county in that State. Since the first of March they have made 5 tons of pig iron per day, which has been used for moulding and found equal to the famous Scotch pig. This is certainly good news, as we have not yet had any native pig iron fit for casting good smooth hollow ware.

Meals on the North River Boats.

Some of our North River Boats have adopted the custom of our Eating Houses, by paying only for what they choose to eat. At the sound of the bell, all who choose take their seats and order such a breakfast or dinner as they desire from a card of dishes set up before them. Each eats what he wants and pays for it the stipulated price, and those who eat two shillings worth are not requested to average bills with those who gormandize to the value of a dollar.

Railroads.

The passenger cars on the Baltimore and Ohio Railroad have commenced between Cumberland and Baltimore, to run the distance in a half hour shorter time than they did last year.

Mr. Daniel Ayer, of Lowell, will pay upwards of $6000 of debts from which he was discharged upon his failure some years ago, on Monday next, and give his former creditors an elegant supper, at his house, into the bargain, at the same time. This sum will cover principal and interest in full.

Expences of California Emigration.

Dr. Comstock gives it as his opinion that the emigration, outfit and labor of 20,000 emigrants to California will cost the United States $23,260,000, which sum must be received in return for expenditure before the profits can commence.—*Ex.*

[Well, we dont see into the Doctor's method of calculation. The whole cost for emigrants to California is simply the time lost in going there

The Ancient Britons.

In a lecture at Aberdare, the Rev. J. Griffiths has declared it a fact, that the Welsh language has been preserved so pure that the Briton of the time of Julius Cæsar might converse with ease with the Welshman of 1849.

The Cotton Crop.

The cotton planting in the South has been very backward, owing to the first seed having been destroyed by frosts in a number of places.

Largest Steamboat in the World.

The new steamboat New World to run on the North River, owned by Isaac Newton, Esq. is 382 feet long and 37 feet breadth of beam. Her wheels are 46 feet in diameter; the engine 76 inches, with 15 feet stroke.

Tobacco and Mortality.

At the last meeting of the Academie des Sciences, Paris, a paper was brought forward by M. Carbonnel, upon the effects of tobacco on the workmen employed to make cigars and prepare tobacco. It would appear that out of 420 females whose husbands followed that occupation, 356 had twins; but with regard to health, out of 1,000 workmen, 340 became emaciated to the highest degree, and 64 in a secondary manner.

A writer in the Dundee Courier proposes that the seed-potatoes be cut from end to end planted in drills a yard apart, and when the tubers begin to form, the drills be hilled up on one side, and thus will not conduct water to the roots.

The Mineral Point Tribune announces the discovery of an extensive quarry of beautiful marble, near the Wisconsin River. Also the discovery of a new and valuable vein of copper in the same vicinity

Wisconsin has an area of 34,511,360 acres, and a population not exceeding 300,000 persons, thus making it manifest that she has room for a few more yet.

Mr. E. G. Squier, U. S. Charge to New Grenada, has been elected an honorary member of the London Archeological Association.

From a recent exhibit of the "Methodist Book Concern," in this City, its assets appear to be $643,217,60, while its liabilities amount to $8,403,94 only. The profits of the concern are annually divided among the several conferences.

There was built in Maine in the year ending June 30, 1848, four hundred and twenty eight ships, barques and brigs, in the aggregate amounting to nearly 90,000 tons.

The chief use of a bachelor, according to the Baltimore American, is to count one in the census.

The railroad of the New York and Erie line was opened from Binghampton to Oswego on the 1st. inst.

Of 1,598 vessels built in the 1846-7, the greatest amount of tonnage (63,549 tons) was built in the State of Maine. Only 37,591 tons were built in this State, on the seaboard.

The number of buildings destroyed by fire at St. Louis was 418, not including premises of little value.

By the last news from Europe there was every evidence of a good crop both of potatoes and grain for 1849

The steamer "Fashion" recently made the trip between Kingston and Montreal in less than 12 hours.

The Artesian Well at Charleston, S. C., had on Saturday last reached to a depth of 835 feet, but the stratum of marl has not yet been penetrated.

The Mineralogist.---The description and locality of every important Mineral in the United States.

(*Continued.*)

SULPHATE OF MAGNESIA. (EPSOM SALTS.)

Occurs in crystalline fibres, of a grayish white color; silky lustre; translucent; dissolves in water; boils when heated; brittle. Found at Coeymans, N. Y.; Monroe and Greenbriar Cos. Va.; Mammoth Cave, Ky.; Corydon, Ind.

COMPACT MALACHITE.

Occurs massive, of a greenish color; fibrous radiating structure; silky lustre. Found at Greenfield, Mass.; Boundbrook, N. J.; Nicholas Gap, Pa.; Blue Hills, Md.

FIBROUS MALACHITE.

Occurs in fibres, of a green color; silky lustre; translucent; soft; brittle. Found at Cheshire, Ct.; Schuyler's mine, N. J.; Perkiomen lead mine, Pa.

BLACK OXIDE OF MANGANESE.

Occurs compact, radiated, fibrous and earthy; specific gravity of 4.14 to 4.80. Soils the fingers; infusible alone; when fused with borax it gives a purple color, and chlorine is evolved by the action of muriatic acid. Localities: Bennington, Monkton, Vt.; Milton, Dorchester, Lynn, Deerfield, Leverett, Richmond, Adams, Plainfield, Mass.; Lebanon, Ct.; Troy, Ancram, Manhattan Island, N. Y.; Hamburgh, N. J.; Wilkesbarre, Northumberland Co., Lancaster, Pa.; Albemarle, Shenandoah Cos. Va.; Greenburg, Big Sandy River, Ky.; Lawrence Co. As.

SILICIOUS OXIDE OF MANGANESE. (FOWLERITE.)

Occurs in masses made up of granular concretions, of a reddish or yellowish white color; specific gravity of 3.20; scratches glass; in small or thin pieces; fusible. Found at Middlebury, Vt; Cummington, Mass.; Cumberland, R. I.; Hamburgh, and Franklin furnace, N. J.

CONCHITIC OR SECONDARY MARBLE.

Occurs compact, sometimes granular, of a white, reddish, yellowish, brownish, blackish or bluish color; sometimes spotted or striped; yields to the knife; specific gravity of 2.5; burns to quicklime; effervesces with acids; contains shells, which are interspersed Found near the Hudson, and Seneca Lake, N. Y.; Northumberland Co. Pa.

MELANITE.

Is a black variety of Garnet. Occurs in crystals of a shining lustre; Specific gravity of 3.70; fusible. Found at Germantown, and Morris' Hill, near the Philadelphia Water Works, Pa.

SULPHATE OF MERCURY. (CINNABAR.)

Occurs massive, often fibrous or slaty, and crystallized, having a lead or red gray color; adamantine lustre; specific gravity of 8; volatizes before the blow pipe, emitting the odor of sulphur; ussually occurs in the form of a dark red sand. It is found on the borders of Huron, Michigan, St. Clair and Erie lakes, and the mouth of Vermillion River; also in California, in the Coast Range which separates San Juan valley from the ocean, and in about lat 37 N., long. 121½ W., and about 50 miles south of San Francisco.

MICA.

Usually occurs in thinly foliated masses; colors, from white through green, yellowish and brownish shades to black; sometimes crystallized; glittering lustre; translucent. plates flexible and elastic; yields to the knife; fusible; specific gravity of 2.70; plumose, laminated or prismatic. Found at Brunswick, Unity and Bath, Me.; Bellows Falls, Vt; Acworth, Alstead, and Grafton, N. H.; Chesterfield, Brimfield, Russel, Barre, Gosben, South Royalton, Mass.; Middletown, Haddam, Watertown, Woodbury, Hartford, Ct.; Muno Iron Works in the Highlands, Greenfield, Greenwood, Henderson, Orange Co., Warwick, and Edenville, St. Lawrence Co. N Y.; Germantown, Chesnut Hill, Pa.; Newton ane Franklin, N. J.; Jones' Falls, Baltimore, Md.

Convict Library.

The library of the Ohio State Prison contains 7.00 volumes. The gas apparatus lights up brilliantly every part of the prison, thus enabling the prisoners to spend the long evenings in reading the books of the library, rather than as was formerly the custom, remaining in the darkness and solitude.

Preparation of a Solid Varnish for Preserving Iron from Rust.

Oxidation is one of the greatest inconveniences to which certain metals are liable. Wrought iron, for instance, corrodes in a short time when exposed to damp or two acid vapours, and a substitute has therefore been sought for it, for various purposes, in cast iron, which is not so easily oxidated but which has not the ductility of the other. Expedients, more or less efficacious, have been proposed for preserving iron from rust. It is generally covered with a varnish capable of withstanding the influence of the atmosphere. In order that this varnish may fulfil the conditions required, it ought to be so elastic as not to scale off, and so adhesive as not to leave any spot uncovered.

In France a patent for fifteen years was granted on the 26th of September 1791, to Madame Leroi de Jancourt, for a metallic varnish for preserving metals from rust. It is composed of five pounds of tin, eight ounces of zinc, eight ounces of bismuth, eight ounces of copper, and eight ounces of salpetre. These metals mix in such a manner that the metal resulting from them is hard, white and sonorous. The small proportion of copper introduced in the composition produces no verdigris.

The articles to be covered with this coating are to be heated only in the matter itself, melted in pans of plate iron. When sufficiently heated they are taken out, and sal ammonia is strewed over them: covered with this salt, they are quickly plunged into the composition; they are then wiped with tow or cotton as is done in common tinning, and the part coated is immediately dipped in water.

Iron nails and pins were formerly used to fasten the sheets of copper upon the bottom of ships; but since it has been ascertained that the galvanic action produced by the union of those two metals is a cause of destruction, copper nails and pins, which, though not so strong, are not attended with the same inconveniences, have been employed in their stead. A method has, however, been devised for covering iron nails with a varnish so adhesive that they might be used without danger for lining ships. Cast iron nails were proposed for the same purpose, but soon given up, because they were found very liable to break if care be not taken to strike them exactly in a perpendicular direction.

A method equally simple and advantageous for preserving iron from rust is to heat the metal red hot and to rub it in that state with wax. After it is grown cold, you remark that all the pores of the iron are completely filled, and that this kind of coating is extremely uniform; but as it is applicable only to articles of small dimensions, it still remained a desideratum to discover a varnish which might be used cold, and which would resist the combined action of the air and of acid vapours.

M. Lampadius, professor of chemistry at Freyberg in Saxony, resolved this interesting problem. Having remarked that the sulphurous and acid vapours which rise from the furnaces for grilling ores, destroy in a short time the ordinary varnishes, and attack metals used in the construction of buildings, he studied to discover a coating which would preserve them from rust.

As it was necessary to oppose to the acids a matter which they could not dissolve, he tried two metallic oxides, already saturated with acids, and which by their desicative qualities are well adapted for the composition of varnish. Success crowned his attempts, and an experience of 30 years has sufficiently demonstrated the utility of the menstruum

M. Lampadius employed for this purpose sulphated lead and sulphated zinc, or vitriol of zinc. The former is prepared by mixing a solution of four ounces of acetate of lead in twelve ounces of water, with a solution of seven ounces of sulphate of soda in fourteen ounces of water. The precipitate obtained by this mixture is sulphated lead, which is filtered, edulcorated, and dried.

Sulphated zinc is sold by all the chemists and druggists by the name of white vitriol or zinc.

The method of preparing the varnish is as follows:—Reduce to an impalpable powder one ounce of plumbago, or anthracite, with which mix four ounces of sulphated zinc, and add to it, by degrees, one pound of varnish, prepared with linseed oil, previously heated to ebullition. This varnish dries quickly, and perfectly preserves from oxidation the metals upon which it is laid. It has been employed with success to cover lightning-conductors, and answers equally well for roofs covered with lead, iron, copper, or zinc, which are continually exposed to the action of damp and of acid vapours.

Inventive Genius of American.

BY WALTER R. JOHNSON.

This is a condensed review of a lecture by Mr. Johnson delivered before the Maryland Institue for promoting the Mechanic Arts.

The author traces the history of the guelds or trade corporations which existed in the feudal ages, and is still luxuriant in Germany, where they first originated, and were famous in the days of Jacob Von Arteveld, the Brewer of Ghent. He points out the evils of those trade corporations—and the clogs they have been to inventive genius, although we must exempt Germany from the charge. Under the French King, the system was odious and oppressive in the highest degree.

James the 1st, of England, in 1623, was the first monarch in that Island who struck the first blow against the corporate monopolies which had been introduced into that country, principally by the Flemings. It was good that James did so, for the old trades set their face against all improvements, and the same spirit is not yet dead.

"The mode of encouraging inventive genius and rewarding those who introduce new branches of industry founded on discoveries and inventions, it may be said that Europe and America have alike adopted that national and efficient system which was introduced into England in 1623. The system of exclusive rights for limited periods, as a general law it first found footing in the United States, in 1790. The system as established in the United States deals liberally with the inventor, both as to the amount of tax or fee imposed and as to the benefit conferred upon him by the action of the public authorities. By instituting examinations prior to the granting of letters patent, to decide upon the novelty of the invention, much legal controversy is saved, and although a few instances of injustice may have resulted from withholding the right for which application was made, yet in a far greater proportion of cases positive benefit has been done."

"The Patent Laws of the United States have been in existence 59 years and the number of patents issued previous to 1849 was 16,208."

Agriculture, manufacture of clothing, tools and improvements in stoves, and for such like purposes embrace 5,408 patents.

New York City "says Mr. Johnson is doubtless the focus where inventive genius is concentrated and acting with the greatest intensity."

In 1847-'48 New York City alone secured something more than one sixth of all the patents granted viz. 174 out of 1165. Within the last ten years New York, Pennsylvania and Massachusetts contributed 60 per cent of all the patentable inventions of the country.

Baltimore City contributed a greater per centage to the state of Maryland than any other city to its respective State.

"When the Mechanic Arts and the practical sciences are in the greatest activity, then inventive genius is also in the highest degree stimulated and most successfully applied. Every department of industry has been indebted for its advancement to the inventions of our ingenious American Mechanics. American ingenuity has given us those improved implements of husbandry without which more than three-fourths of the present immense productions of our corn growing states could never have had an existence. Where were all the cotton fabrics of the world without the invention of Whitney."

Mr. Johnson alludes in glowing terms to the inventions of Fitch, Rumsey, Fulton, Evans and Morse. It is very singular that we scarcely ever hear the name of Col. John Stevens, the inventor of the tubular boiler mentioned in any American work. This is one of the most important inventions in the whole history of the Mechanic Arts.

The lecture is an able one, and that part relating to the ancient trade corporations is very valuable. We agree with the lecturer that they retarded mechanical improvements, but then somehow or other we have a liking to those old mechanical republics.

These corporate bodies were strictly democratic each in itself, especially in the free cities of Germany and the boroughs of Britsin. It was not then as it is now among employers. The journeyman associated with his employer nearly upon an equal footing, and, it was a common thing for apprentices to become the sons in law of their employers.

There is a kind of aristocracy now in the two relationships, which puts equality out of the question. In the old corporates, the journeyman's vote was equally potent with his employer's and somehow or other the two were almost like brothers.

In this Country, we happily do not need such organizations,

Moss.

The humble and apparently insignificant Moss is an active agent in some of the most important changes of nature, By its great absorption of moisture, its decay and subsequent revival in succession, the hardest rock, upon which not even a blade of grass could grow, becomes covered in the course of years with a stratum of fertile soil, supporting the most luxurient trees. At first a little dust is blown into the interstices of the rock, into which are also driven by the winds some of the seeds of the Moss from a less sterile spot. Here they vegetate, and the hitherto naked rock becomes covered with pretty green tufts; which spreading wider and wider year after year, its whole surface is at length covered with the smiling carpet of Nature.

The continual growth and decay of the Moss and other small plants, gradually increase the thickness of the stratum, larger plants, the seeds of which are borne from all quarters by the weather; the rotting of these plants continue to add to the soil, till at last are seen to flourish noblest trees of the forest.

Thus the hard and barren rock is made to abound in the richest products and the grandest vegetation; and thus are the sandy heaths and desert plains converted into verdant and fruitful fields.

On the tops of the highest hills and mountains the Mosses attract the moisture from the clouds, which trickling through every crevice to find its way to the lowest place, accumulate and form cascades and brooks, which again uniting, swell into the largest rivers.

These waters flowing into the sea are again raised by the influence of the sun's rays, and form clouds, again to be employed in fertilizing and refreshing the earth. Such is the admirable and unceasing process of Nature.

City of Nanking.

This city was formerly the capital of the Chinese Empire, at which time the wall around it measured thirty-five miles. This wall is now in ruins, as well as a great part of the ancient city. Another wall has been built around the present city, which is nearly as large as the former.

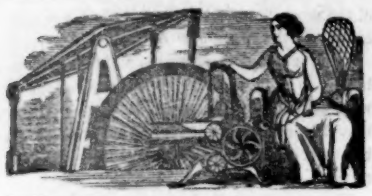
Nanking has extensive manufactories of fine satin and crape, and the cotton cloth called Nankeen derives its name from this city; paper and ink of fine quality, and beautiful artificial flowers of pith paper, are produced there. In distant parts of the Empire, any fabric or article, of superior quality, is said to be from Nanking.

One of the most celebrated objects at Nanking is the far-famed Porcelain Tower.

The cloth sold here for Nankin is mostly all a base fabrication, colored with the nitrate of iron, oxidized with the hydrate of lime.—The real Nankin is the natural color of cotton grown in China.

Longevity.

Peter Jackson, a slave to a Kinderhook Dutchman, died at Amherst, Mass, on the 19th inst., having lived over a century. He recollected the old French war perfectly, and the oldest inhabitants who had known him from their youth believe him to have been 122 years of age. He was born on a voyage from Africa.



New Inventions.

Self-acting Brake for Vehicles.

Mr. John Boynton, of South Coventry, Ct., has invented a beautiful self-acting Brake for vehicles, which must prove of great value for wagons in hilly countries or those who have to drive teams down steep declivities. It consists of a friction brake which by shifting a pin acts at once upon the face of the fore and back wheels by being operated by the pole and reach of the wagon, by the animals attached to the wagon. At some future period there will be a very extensive mountain trade with the elevated regions of Mexico and California, and lines of railroads leading to the older portions of these States. In that case this *brake* will become of immense value, and the years are not far distant when this will be the case. Measures have been taken to secure a patent.

Improved Straw Cutter.

Among the many varieties of this class of machines, it might be supposed that anything new was an impossibility, but such is not the case. We occasionally see improvements and modifications where we would not expect it. This is the case with a straw cutter invented by Mr. Lewis Tupper, of Auburn, N. Y. The knife is arranged in a different manner from any other that we have seen, and the feeding rollers are turned by the reciprocating motion of the cutter. The knife is a single blade bevelled downwards on both sides from the middle. (This is like some others.) It is secured to a vibrating horizontal rod or lever, (one on each side of the box,) and it has fork ends with screws on them which pass through the knife and secure it firmly, while it can easily be detached when required. These rods have a reciprocating motion by being attached to the knife at one end and secured by pivot axis to the side of the feed box at the other end.—One rod passes through a small groove on the end of a vibrating arm which works two clicks that mesh into a ratchet wheel on the end of the upper feed roller; therefore every cut of the knife moves the feed roller one notch round, giving it an intermittant rotary motion to coincide with the motion of the knife. This arrangement saves some gear wheels and is a good method of feeding an intermittant cutting motion.

New Steam Boiler Feeder.

Mr. William Foskit, of Windsor, Ct., has invented a new and beautiful little apparatus for feeding boilers without the use of the force pump. It is so constructed that the water will be continually kept at the water line, feeding none when above that line, although its motion is the same as when feeding a regular quantity. The principle of it consists in bringing a receiver alternately in communion with the water tank and then with the steam of the boiler and the water in the boiler, to receive the water in the one case and pass it into the boiler by the steam at the water line, in the other case. For this purpose he has constructed a small revolving disk driven by a pinion which works steam tight between two metal plates, communicating with the boiler at a certain line by a tube passing down below into the water of the boiler. This is the only way it has communion below. Above it communicates with the water tank at one part by a pipe and at another part by a small pipe with the steam. The revolving disk has a cavity or receiver in it, (more may be used if required) which receives the water from the tank above, carries it round between the upper and lower plates until it is passing above the feed pipe into the boiler below, when at that moment it is also brought into communion with the steam pipe above and the water is deposited into the boiler. It will be observed that if the water is up to the line of the revolving disk that the water in the cavity of the disk will not be pressed in but carried round. It can be operated by a reciprocating motion and its principle of communion with the water, boiler and steam, is like that of a slide valve, only it has a cavity to receive and carry the water to feed it into the boiler. The apparatus is very ingenious. Mr. Foskit has taken measures to secure a patent.

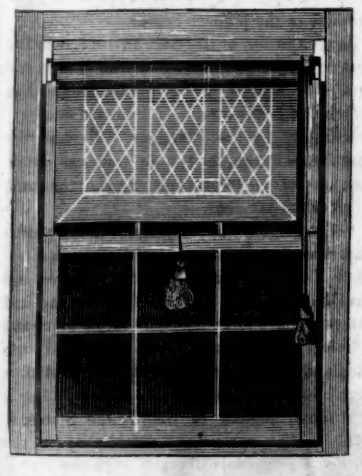
New way of making Shot.

The manufacture of shot, we learn, is about to be commenced in this City upon a new principle. The tall tower is to be abolished, and one of moderate height substituted, which will equally answer every purpose, by the new invention, which consists in forcing a current of air upwards in the flue while the lead is descending, which thus retains the shot as it falls from above, and cools it, without making it necessary that it should drop from any great height.

Messrs. Leroy & Co., Water street, are manufacturing shot on the above principle.

Marden's Improved Mode of Hanging Window Shades.

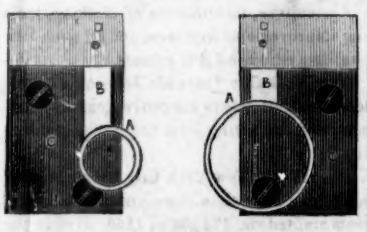
Fig. 1.



This invention is that of G. H. Marden, of Charlestown, Mass., and patented by him last year. The nature of it consists in providing oscillating side blocks, in which the ends of shade roller is suspended to allow the shade and roller to be moved out and in and to allow the window sash to move up the full length of its plane, and also to allow inside shutters to close freely.

Fig. 1, is a front view showing the shade applied to the window and fig. 2, is a view of the oscillating blocks into which the ends of the shade roller is suspended. C C, are pieces of brass screwed into the beads of the window

Fig. 2.



staff. A A, are the oscillating blocks secured under D D strips of metal, and swing on axis suspended by hanging pieces B B. The ends of the shade roller being hung in the blocks or eyes A A, one on each side of the window, and in this way the shade can be moved out and in as set forth above. The invention is a very neat and convenient one and those who would prefer to have a neat and superior mode of hanging and operating their window shades, to the inferior common way, will find this method unrivalled by any other plan yet brought before the public.

Important to Railroad Men.

The Independent, N. H. Democrat says:—Mr. Josiah M. Magoon, of Hooksett, has left at our office a model machine for carrying off the smoke and cinders, from railroad trains. This is an important desideratum, and if feasible, will add greatly to the safety and comfort of travellers. The machine invented by Mr. Magoon is very simple, and we see no reason why it may not be perfectly successful. It consists of a series of sheet iron pipes a pipe to each car—made tunnel fashion, the small rear end of the forward pipe extending into the larger end of the pipe next behind it. The model may be seen at our office.

[Townsend's apparatus the same as the above is illustrated and described in Vol. 2, Scientific American.

Important Invention in Wool Spinning.

The following from the Cold Water Fountain, Gardiner, Me., will be read with interest by many of our readers.

"It is well known to those acquainted with this kind of manufacture, that wool is not, like cotton, drawn out and then twisted, but that both must be done at the same time, and with the same operation. The present mode of performing this work is by means of "Jacks," which take the wool or roping which has previously been prepared by the cards, and draw and spin it into thread for warp or filling. The Jacks occupy a large space, and occupying a large space require a great amount of labor and care to work them. But by this new invention Jacks may be wholly dispensed with and the thread is drawn out and twisted by the unaided operations of this machine, which is called the "Bates & Tucker Revolving Draft and Wool Spinner."

The Spinner occupies a length of four feet six inches, by a width of three feet and contains twenty spindles. It is stated to do the work of fifty spindles on a Jack, which would occupy a space of ten feet by seven feet eight inches. In other words, fifty spindles of the Jack occupy seventy-eight square feet, while the spinner occupies thirteen and one-half square feet—a fraction over one-sixth of the same space!

This machine possesses several important advantages over the Jack. 1. There is a great saving of time, as seen above. 2. A great saving of labor, performing a much greater amount of work with much less manual assistance. 3. It requires much less power in its operations. 4. By this method there will be no small saving in using the yarn, as bobbins wound by machinery will contain a greater quantity of yarn, and it being wound more even, can be wove or warped off with less delay.

The yarn spun by the Revolving Draft is more even both in size and twist, than that spun by the Jack; and it makes a soft, elastic and strong thread. It will spin coarse as well as fine stock. The machine is very simple in its arrangement, and it is so constructed as to give great strength to each part, while but little strength is required to do the work.

Public attention was first called to this great invention by the Maine Farmer last November, but since that time important improvements have been made by the inventors and its powers more fully tested. This machine is the invention of Mr. Wm. C. Bates and Mr. S. B. Tucker, of Gardner, Maine. Mr. Bates is a practical machinist, and Mr. Tucker a wool spinner and manufacturer."

This machine, we noticed before in the Scientific American, and a number of enquiries were made of us regarding its peculiar arrangement and construction. Of course, we could not give this information definitely, but we always like to notice improvements in machinery, and like to hear of them. We have a sample before us of the yarn spun by this machine, and it looks really beautiful.

New Locomotive Engine.

A new locomotive has lately been introduced on the Camden and Amboy Railroad, New Jersey, designed by R. L. Stevens Esq., of this city, and built from his plan by Norris & Bros. Philadelphia, and which is certainly an original. It is constructed with two driving wheels, 8 feet in diameter—a 13 inch cylinder, and 34 inch stroke; the boiler is hung under the axle of the driving wheels, and runs upon six truck wheels in front, which are quite low. By this means, the weight of the engine is brought very near the track, which enables it to run steady, notwithstanding the great height of the wheels. It is constructed with a variable cut off so as to use the steam expansively as may be required. The furnace is made to burn coal and is inclined downwards from the furnace door. It is represented as being able to run 70 miles an hour with ease, and with a train of 8 or 10 cars.

A Curious Discovery.

Mr. William Longmaid, of London, has recently taken out a patent in England for a new way of treating the oxides of iron and obtaining products from them for making paints, &c. which is certainly novel.

The mode of operation is as follows:—

The oxide of iron is to be reduced to a finely pulverized state, preparatory to the process, and in that state is to have intimately mixed with it some resin or tar, or other carbonaceous material, the patentee preferring the use of resin or tar for the purpose; and the proportions he recommends to be from about 10 to 15 per cent of the carbonaceous material, according to its nature; the patentee prefers to use a quantity of the carbonaceous material a little in excess of that necessary for the operation. The carbonaceous material employed is to be reduced to a pulverized state when used in a dry state; but when they are fluid or semi-fluid, they are mixed with the oxide in that state, and afterwards dried and reduced to powder; the materials thus mixed are then put in retorts or other proper close vessels, either of cast iron or other material; these vessels being about five feet long, one end being open, and to be afterwards closed by a cover; this retort is to be afterwards charged with the mixed materials—the quantity of each charge being about 1½ cwt, and when the cover is secured upon the end of it, the retort is placed within a suitable furnace in a vertical position; the open end, upon which is the cover, being placed downwards, that the gaseous matters evolved during the process may pass into the furnace and be consumed; the retort is then to be gradually raised to a dull red heat, and when the contents of the retort have ceased to evolve the gaseous products, then the whole is suffered to remain for about two hours at this temperature, when the retort is to be removed from the furnace, and suffered to gradually cool down ere the contents are withdrawn—as by allowing them to come in contact with the atmosphere while in a heated state, the quality of the products would be injured; the product thus obtained is a dark-colored matter, which may be used as a pigment, or ground with oil, will form a paint. Instead of allowing the gaseous products evolved to pass into the furnace, they may be collected by closely luting the cover of the retort, and applying a pipe to carry them off to a condenser and gasometer; these products being a volatile oil, and an inflammable gas fit for an illumination.

Novel Method of Marine Propulsion.

Messrs. R. L. and B. F Stevens have constructed an iron vessel which is now in this City to test the principle of their new invention, which we noticed last year, and which they have secured by patent.

The principle of the invention consists in applying air to the immersed surface of a vessel in motion, as described, and thus interpose, by a continuous or intermittent supply, a stratum of air between the immersed surface or portions thereof, of the vessel, and the water, for the purpose of reducing the friction of the water.

New Instrument for dressing Wounds.

The Boston Medical and Surgical Journal says, that Daniel Huntington, M. D., of Rochester, Vt., has invented a curious little instrument for restraining bleeding vessels, which would be an excellent tourniquet under any circumstances. The idea is to use a pocket handkerchief, a ribbon, or a cord, instantly, if necessity requires. It is really a beautiful winch, which, with a ratchet wheel and dog, holds a grip which would be equal to all emergencies. While it combines all the advantages to be found in any and all the known kinds of tourniquets, it is far more simple than any of them in point of construction, cheap, and yet powerful and certain in its action.

The Potatoe.

It is a fact perhaps not generally known to farmers, that there are two parts in the potato, which if separated and planted at the same time, one will produce tubers fit for the table eight or ten days sooner than the other. The small end of the potatoe, which is generally full of eyes, is that part which produces the earliest; the middle or body of the potatoe produces late, and always larger ones.

NEW YORK, JUNE 9, 1849.

The Cholera.

This terrible disease appears to be a native of Asia, and is generally confined to the tropical regions of that continent, and those of Europe and Africa which belt its unhealthy borders. It seldom travels beyond its pestilential precincts and we may say it never does, unless some more than common cause pollutes the gale that wafts it across the steppes of the Don down to the plains of Sarmatia, across the British Channel and then away to us here over the wide Atlantic. History informs us that Europe has suffered at various times from awful plagues. The plague which in 1665 swept off 100,000 of the inhabitants of London, was a terrible disease. It was no doubt a species of cholera. The plagues which used to visit Europe at intervals during the dark ages, left both cities and villages a wilderness of death behind them. In modern times its ravages does not appear to be so severe.—This may be attributed in cities to well paved streets, better ventillation, and greater skill in our physicians to treat it.

War seems to be the grand pestilential mother of this disease. The course of the disease which is now among us may be traced from the Rio Grande to the Punjaub in the East Indies, where the atmosphere was polluted by the corpses of 30,000 men who fell in battle before the ambitious army of England. The typhus fever was engendered in the hospitals of Russia, during the retreat of Napoleon from Moscow, and it stopped not till it had polluted the whole earth, and it is still among us as a terrible monument of man's most baneful passions.

The cholera seems to gloat upon the weakest and most miserable of the human family. There are exceptions, but this is the rule.—This is certainly strong evidence, that health is the handmaid of virtue, peace and plenty, while pestilence is the attendant of war and famine. The Apocalypse represents the terrible scene of war, by death on the pale horse, followed by gaunt famine and withering pestilence. These scourges should not afflict the human family to no purpose. When will men learn the full meaning of that divine expression, "Peace on earth, good will to men."

The cases of Cholera that have already occured in this great city, have been of a kind not calculated to excite any general apprehension. New York is more healthy according to her resident population than any City in the World. When a pestilence of this nature visits a city, it should be met at once, by the healthy bracing themselves up to fulfil the offices of good Samaritans to their more unfortunate neighbors. During the great plague in London, it is recorded of a gentleman that he was the means of saving a great number of lives, by his attentions, and he was prevented from running away to the country when his carriage was at the door, by hearing his negro servant ask "if his massa's God lived in the country." Various remedies have been proposed and who can tell which is the best. It has been found that chloroform rubbed on the body relieves the cramp. We believe that the following is a good solution to be taken and people would not be the worse of having it in their houses. Gum camphor one drachm; gum Arabic and white sugar, each two drachms; water, from five to six ounces; spirits of lavender compound, half an ounce; laudanum, sixty drops. Of this, take a table spoonful occasionally.

No sooner was the Cholera announced to have broken out in our city, than the streets were deluged with flaming handbills of quack preventatives, but it was pleasing to know that but few were frightened. With our plentiful supply of water, our city will exhibit as clean a bill of health this year as it did the last. This we are glad to know is the prevailing opinion among our citizens.

Supplying Albany with Water.

It is well known to many that Albany, the capital of this State, is miserably supplied with water. The more elevated parts of the city have to depend on rain water for domestic use, and frequently in droughts, this supply fails. When this is the case, there is great suffering. A number of projects have been brought before the city for a better supply of water, and this question formed a leading motive of action between opposing parties at the late municipal election. One party was for bringing in the Mohawk River by tunnel from above the Cohoes Falls, and the other party was opposed to this measure, only on the ground of too great expense. The latter party was victorious, and no doubt, right in their success. Owing to the great fire in Albany last year and the great amount of taxes arising from that and other causes, the inhabitants can now but ill afford to enter into new and expensive, although it may be beneficial enterprises.

We see that the City Surveyor, George W. Carpenter, Esq. has lately presented a Report of a mode of supplying the city with water from the Hudson, by steam power, and estimates the total cost for reservoirs, engines, &c. at $324,000. One reservoir is to contain 4,000,000 million gallons and the other 6,000,000 gallons, sufficient to supply 80,000 people with 25 gallons per day for nearly a week.—This plan of supplying Albany with water was communicated to us last year by Mr. S. McElroy, of Albany, assistant surveyor, and a young and rising man. His estimate was something less than the above, but his views were sound and exhibited an acquaintance with the subject. Were the inhabitants of Albany capable of entering upon the enterprise of bringing in the Mohawk by gravitation at present, we would be glad, but as they are not, the plan of supplying it with water by steam power, is the next best, and no doubt a good one. Many cities have been thus supplied exclusively with water, and some of them largely engaged in manufacturing. The city of Glasgow, in Scotland, the greatest manufacturing city in the world, with the exception of Manchester England, has been supplied for thirty years with water forced a distance of 5 miles by five huge steam engines. These engines supply 300,000 inhabitants with filtered water, and also supply bleach works, dye works, foundries and factories innumerable besides. The water is carried to the tops of the highest houses, and families are supplied with ten times more water than the inhabitants of Albany are at present, and for one-sixth the price. Let the Albanians put up a good, powerful low pressure engine and they need not calculate, we think, the annual expense of two engineers as embraced in Mr. Carpenter's Report.

Dyeing Straw.

The French pursue a method of dyeing straw for hats, to open it up when in a damp state and roll it out between a pair of cylinders. For light, delicate colors, this process is always pursued in new straw. To dye blue, common chemic (sulphate of indigo) to which has been added a little potash, is employed.—It will do very well, however, without the potash. This composition is used for various shades. A copper vessel is brought to boil and such a quantity of chemic added to the water, as will dye the shade desired; the fire is then removed and the straw put in and kept immersed until it is deep enough in shade. It is then taken out, washed in cold water and dried. This plan will dye the lightest and darkest shades of blue according to the quantity of the sulphate of indigo used. Yellow color can be dyed on straw by boiling it in a weak solution of yellow oak bark and alum, but the muriate of tin is better than the alum. Green can be dyed on straw by employing a bath of *turmeric* and sulphate of indigo, but it is best to dye the straw yellow first with oak bark and then give it the sulphate of indigo, which should be neutralized of its acid by the sugar of lead. This makes a *very fast green*. Lilac may be dyed on straw, by first dyeing it a light blue and then a pink color on the top.

Pink is dyed by steeping the straw in a weak hot solution of cochineal and sulphuric acid, or instead of sulphuric, use the muriate of tin and some cream of tartar. This makes a very beautiful color.

Red colors may be dyed on straw by using a very strong solution of the cochineal and muriatic—no sulphuric acid. Every shade of drab on straws may be done in this way by using a greater or less depth of blue or pink on the straw, but it is best to dye the pink shade first and then dye the light blue on the top.

Fine reddish browns on straw are dyed with catechu, the sulphate of iron and the chromate of potash. The straw must be immersed in three separate vessels containing these three stuffs, commencing with the catechu. Wash the straw well when dyed before it is dried. Black is dyed on straw by a strong solution of hot logwood, into which the straw is steeped for about 10 hours. After this it is immersed in a weak solution of the sulphate of iron and *sumac*, and then washed and dried.

The above modes of dyeing straw will be found useful to many; and from the hints given, any person may branch out freely into all the shades, from gray to violet and deep brown.

Fire Brick.

Mr. T. S. Mackay, one of our valued subscribers in Pennsylvania furnishes the following account of Fire Brick: "I have been thinking of sending you a few fine brick, as samples manufactured at Queen's Rua in Clinton Co. Pa., on the west Branch Canal of the Susquehannah. As samples of these bricks have lately been examined by the most competent judges, and pronounced in every respect equal, if not superior to the best English brick. They have been used for several years in some of the largest furnaces in this State, and are considered the very best. The Queens Rua Company I understand have orders for uywards of 250,000 for this season; they are also engaged in mining and shipping some of the finest and purest bituminous coal to be found in this State, a sample of which I also send you. I am in no way interested in this business, only as a Pennsylvanian, and an American, and should rejoice to see every article we can produce supply the place of foreign especially when of an equal or superior quality."

Very Important Patent Cases.

On Friday the 1st inst. in the United States Circuit Court, Philadelphia in Equity, before Judges Grier and Kane, the important patent case of Woodworth's and Barnum's Planing Machines, Wilson vs Barnum, was decided, and the opinion of the Court given by Judge Kane, and an interlocutory injunction granted, according to the prayer of the bill until hearing by a further order of the Court.

We make no comments on the above, only we should like to have heard the curious opinion of the Court. An engraving and description of Barnum's machine will be found in No. 18, this vol. Scientific American. It may explain something about this decision when we say the able Hon. W. H. Seward was Mr. Wilson's counsel in the case.

BLANCHARD'S PATENT.

On the same day on which the above decision was made the case of Blanchard's Gun Stock Turning Patent vs. Joseph Brown, was decided on the motion for a new trial. The opinion was delivered by Judge Grier, and the motion refused, and single damages allowed in each case, in accordance with the verdict of the jury.

Charcoal for Wounds or to prevent Contagion in Hospitals.

Charcoal acts upon gases by condensing them in itself, often in proportion of more than thirty times its volume. Charcoal saturated with any kind of gas cannot condense another without giving up part of that with which it is saturated. Charcoal purifies putrid water by condensing the gases generated by the decomposition or putridity of matter in the water. The charcoal employed for this purpose absorbs the putrid gas by the atmospheric air quitting the charcoal with which it has been saturated. Charcoal absorbs the effluvia arising from wounds and also destroys the pestilential effects of such effluvia—let it arise from disease and decomposition in any shape. As it is a good absorbant, it must be a good preservative against contagion. The charcoal of hardwood has the faculty of absorbing a greater quantity of gas than the kind made from light soft wood. It is best to use the charcoal for such purposes in a fine powdered state.

Death of an Ingenious Mechanic.

Mr. Frederick Frœlich, an ingenious Swiss mechanic, employed at the Navy Yard, near Washington, was found drowned last week. It subsequently appeared that he had been shamefully beaten by some persons at the house where he boarded. It is supposed that he was laboring under the effect of an aberration of mind from the injuries he had received, at the time he wandered off and drowned himself. Some persons in the house where he boarded have been arrested. Mr. Frœlich was the author of some very ingenious inventions, and had taken out some patents while residing in France before he came to the United States. One of his inventions was a new mode of ventillating steamships in combination with a new condensing apparatus. Another was a new cut-off, called the *Maltese cross cut-off for valves.*

American Hand Cut Files.

Mr. John B. Cochran has lately engaged in the manufacture of all kinds of Files, at his shop on the corner of Raymond and Willoughby streets, Brooklyn, N. Y. We have examined the files made at Mr. Cochran's establishment and consider them unsurpassed—they are all warranted equal to the very best imported English files, and superior indeed to any that can be made by convict labor. He has got some of the very best file makers in his employ and takes great care to produce none but articles of a superior quality. We like this. Our mechanics are taking great pains now to have good tools—this is as it should be.

Quackery.

Dr. Skinner of Vermont, proposes as a remedy for the enormous evil of quack medicines, to supply the public with medicines in a popular form. Well, we don't like to see medicines prescribed in a popular form. If quack medicine does so much evil in a popular form, what will become of the public when a trade is made by the profession in the popularity of their medicines.

The only way to put down quackery in medicines, is the way we do with erroneous receipts, expose the nature of them and give correct ones in their place.

Remington's Bridge.

A correspondent enquires of us where the assignees of James R. Remington reside, and what are the conditions of the sale of rights for his improvement in Bridge Building, secured by patent about six years ago. Can any one give us the information?

Snakes in New Orleans.

The overflow has brought large numbers of snakes and other reptiles from the swamp up into the streets. Conger Snakes, the most venomous known in this country, had been seen in the water in several places and a little girl, while wading in the water in faubourg Treme, was bitten by something which she did not see, and died in a few hours afterward.

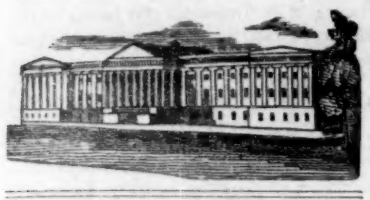
There are now in the course of construction in Newark N. J. two Magnetic Machines for separating iron ore from earthy mixtures. One was finished last autumn and taken to the iron mines in the western part of the State where it performed admirable.

The Egyptian Government has closed its paper mill in the citadel of Cairo, and has intimated to the managers of its other manufactories that it intends to discontinue those establishments.

Our London Patrons.

We are happy in being able to inform our English patrons that such arrangements have been completed with the London Patent Office that the Scientific American may hereafter be found there. Messrs. Barlow & Payne are agents at 89 Chancery Lane, and will receive remittances on account of the Scientific American from those who may desire to subscribe.

Terms—3 dollars per year and postage paid out of the United States.



LIST OF PATENTS.

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending May 29, 1849.

To Daniel Dunham, of Pawtucket, R. I. for improvement in Cooking Stoves. Patented May 29, 1849.

To Horace Halbert, of Oneida, N. Y. for improvement in Cooking Stoves. Patented May 29, 1849.

To Charles Perley, of New York City, for Direct and Counter-motion Winch. Patented May 29, 1849.

To Charles Rogers, of Bridgewater, Mass., for improvement in machinery for cutting Welts for Shoes Patented May 29, 1849.

To D. N. Ropes, of New Haven, Conn. for improved method of attaching the tang to the handle of Table Cutlery. Patented May 29, 1849.

To Devolt Stetlemeyer, of Hancock, Md., for improvement in Bedstead fastenings.. Patented May 29, 1849.

To Wm. H. Willcox, of Tarrytown, N. J. for improvement in Boring machines. Patented May 29, 1849.

To L. Augur & J. L. Lord, of Chester, Conn. for improvement in stops for Carpenters Benches. Patented May 29, 1849.

To G. W. Fulton, of Baltimore, Md. for improvement in Pumps. Patented May 29, 1849.

To John Wilson, of Gentsville, S. C. for improvement in Looms Patented May 29, 1849.

To Lorenzo Smith, of Easton, Mass, for improvement in Gates. Patented May 29, 1849.

Precious Metals.

From Comstock's "History of Gold and Silver," we take the following "estimated amount of the consumption and use of the Precious Metals in the United States for other purposes than coin :

Silver tea spoons,	$36,000,000
Silver table spoons,	27,000,000
Silver table forks,	4,500,000
Plate dining service,	5.500,000
Gold watches at $16,	16,000,000
Gold watches at $8,	8,000,000
Silver watches at $2,	4.000,000
Communion silver,	1,229,416
Gold pencils,	2,000,000
Silver pencils,	1,200,000
Silver spectacles,	150,000
Silver thimbles,	450,000
Gold spectacles,	2,000,000
Gold watch keys and seals,	150,000
Silver pitchers and tea pots,	2,000,000
Silver sugar bowls and tumblers,	1,000,000
Waiters' coffee pots,	1,000,000
Gold finger rings,	16,750,000
Gold bosom pins,	14,000,000
Gold chains,	12,000,000
Gold beads,	4,000,000
Gold thimbles,	1,250,000
Gold bracelets,	3,000,000
Gold lockets,	1,000,000
Gold pens,	250,000
Gold leaf,	404,000
Gold foil.	180,000
Total,	$165,013,416

New Inventions.

Who can count 'em? Who can number the hours of labor saved by them? Who can measure the stretch they have made in articles of comfort, of necessity, and luxury.

Without the least surprise we hear of worlds which have never been seen or never can be, and we presume to affirm their exact position. We talk with our friends, while thousands of miles intervene, and query when the telegraph to Europe will be contrived. We never think of being astonished at seeing a man's shadow caught and fastened to a metal plate, so as to be visible a whole life-time.

Who would have dreamed of this twenty years ago.

The "Ten Hour System."

MESSRS. MUNN, & Co.

As the tone of your paper for the past year evinces, you must be included amongst the advocates of the ten hour system. You at one time recommended a convention of manufacturers to meet and unite upon a plan for adopting this system throughout the country; and it would have been well had your suggestion met with a prompt response.

The utter folly of Legislation on this subject, without the decision of such a convention as the basis of action must be apparent to any one who has reflected at all upon this question. Whenever a law becomes coercive in its provisions, to the prejudice of parties most largely interested in its operations; it fails of every beneficial effect.

A law should regulate, not control public sentiment. And how can the sentiments of the laboring classes, regarding the ten hour system be properly known and expressed? Certainly not from brawling demagogues, who wish to make political capital out of their pretended sympathy for the working man, neither can they be gathered from the acts, or expressions of the ringleaders of a "turnout" for these are generally British operatives, who have brought to this country all the venom which a long system of oppression and mismanagement have engendered in the bosom of the employed against the employer, and which is constantly belched forth until every mind in contact with them becomes poisoned with their false sentiments.

A convention of manufacturing Agents and Superintendents could alone fix upon the proper plan to give universal satisfaction, and which could be generally carried out. What a sublime spectacle such a convention would present! When we see the employers meeting to discuss measures for securing the comfort and well-being of the employed, in connection with the profitable management of their business, we may expect to find much of the unnatural jealousy existing between the two classes done away with.

The high wages hitherto paid to operatives in this country have kept us comparatively free from such collisions between them and the owners of mills as have taken place at different times in the manufacturing districts of Britain.

But we cannot blink the fact, that there has been a tendency towards the same unhappy state of things in our own manufacturing towns and villages.

This, as already intimated, may be partly owing to the influeuce of British operatives scattered amongst our manufacturing population, but principally we conceive to the real evils of the British manufacturing system, insinuating themselves constantly, but by gradual and imperceptible degrees into all our establishments.

The worst feature of the British manufacturing system is the entire dependence of the operatives upon their wages in the mills for subsistence, and the consequent necessity of their compliance with all the arbitrary regulations of the owners, especially in regard to the number of working hours. But the law of the land steps in and protects the operatives in this particular. The hours of labor in all manufactories have long been limited by act of parliament to 69 per week. And recently the ten hour system has been adopted with entire success as far as we have been able to learn. The hours of labor in the Eastern States of this country are 73½ per week, and in the Southern and Middle States many of the mills work 82½ hours per week. Yet in the face of these facts our operatives have always compared to advantage with those of Britain. An explanation of this apparent contradiction is to be found in the fact that our mills have hitherto been principally operated by farmers' sons and daughters who have always had good homes to which they could go in case of any dislike to the factories, or at which they could spend a few weeks or months in each year recruiting impaired health, without expense. I am confident that the girls in our Eastern mills have never averaged 10 hours per day through the year. The demand for factory help having always been greater than the supply, all who felt inclined to give up their places in the mills, have been sure of finding employment whenever they might choose to return.

Such a system would be more desirable than a ten hour system, but the dependency of our operatives upon manufactories for the means of subsistence is constantly increasing; immigration as well as natural tendency of things contributes to the separation of the manufacturing and agricultural population. And the more complete this separation becomes, the more is the former dependent upon employment in our manufactories. Had the laws of Britain not interposed for the benefit of her manufacturing population they would have had to endure suffering with which those now experienced are not worthy to be compared.

Yet the very same evils, to avert which the laws of Britain in regard to the hours of labor were enacted, are staring us in the face, and the question with every candid person interested, is not whether our hours of labor shall be limited to ten per day—but how shall this be effected without demanding an unreasonable sacrifice of the capital embarked in manufactures. It were mere presumption for any one person to answer this question with confidence. It needs the united wisdom of our best men from all the States of our Union assembled in convention, to determine this question. What has been effected through the acts of parliament for the British operative, cannot be done under our peculiar government where every State is independent of another in the operation of local laws. And the manufacturers of one State running their mills 10 hours per day, can never compete with those in a neighboring State running 12 hours per day. It would not be expedient to introduce the 10 hour system suddenly into our manufacturing establishments. It ought to be brought on gradually during a period of at *least* four years, diminishing the hours where 12 is the usual number one half hour each year. Even this plan would be unwise in the present depressed state of manufacturing business. It could only be introduced in the event of adequate protection under a wisely framed tariff law.

W. M.

The Use of Lime in Building.

The following is an extract from the address of P. A. Browne, Esq. before the Society for the Developement of the Mineral Resources of the United States in Philadelphia, and published in the Ledger of the 1st. inst.

1st. From the time that the lime is drawn from the kiln until it is slacked, it should be kept in a dry and tolerable close place. The reason is this, the burnt lime being anhydrous has a constant tendency to abstract moisture and perhaps carbonic acid gas, from the atmosphere, and by so doing, to undergo a premature chemical change.

2d. A practice has been introduced into this city and elsewhere, particularly when about to make plaster, of suddenly drowning the lime in an excess of water, instead of gradually supplying that liquid as the operations of slacking slowly goes on, and of limiting the quantity of water to that which is sufficient to form a paste of consistency of clay prepared for the potter's wheel.

Some of the best writers upon cements condemn this practice of drowning the lime and suddenly checking its temperature, in unmeasured terms; and it is confidently believed that if our architects, builders, bricklayers, and plasterers, would exercise a little of that good sense for which our operatives are so justly renowned, that it would soon be abolished.

III. Of the mixture of the slacked lime with an inert substance to form mortar.

The inert body ought not to be added to the lime until (the lime,) is entirely slacked, which may be known by it becoming cool.—So far as my observation goes, the sand or gravel are often added while the lime is yet hot.

1st. The inert body should be of a good quality.

2d. It should be supplied in a due proportion.

Of the abuse of the first, we have a striking example in the use of sand from the sea shore the moisture of which holds in solution the chloride of sodium.

After the great fire in New York, it was the subject of general remark that, the bricks of many of the walls which fell or were pulled down, were as free from mortar as the day they were drawn from the kiln; and persons of knowledge and experience attributed it to the morter naving been made with salt sand. This doubtless, was one cause, but there may have been others, viz: that the bricks were too dry when laid, and the lime of a bad quality.

The rule laid down for the proportions of lime and the inert body, in order that the mortar may be of the best quality, appears to be a very sensible one. It is this, that so much and no more of the lime must be used as is sufficient to fill the interstices between the grains of the inert body. If too much lime is used the particles are not allowed to come into that complete contact, which, as it is believed, is best suited for their crystallization. If there is not lime enough to fill the interstices entirely, the mortar will be porous and weak. I am informed that the practice, in this vicinity, is to mix 1 1-4 bushels of lime with 1-4 of a team load of gravel, (a team load being 39 square feet) and 2 bushels of lime to a one-horse load of sand, i e. to 21 square feet. What is the rationale of this practice? Those who follow it do not seem to be well informed; but it would be easy and exceedingly useful to experiment upon the subject. In the mean time, by filling a vessel of a given capacity with the gravel or sand about to be used, and then pouring into it, from a graduated measure, as much liquid as would exactly fill the interstices, a tolerable idea of the quantity of slacked lime that it would require, might be obtained.

[Houses should never be built in frosty weather. The best way to slack lime, is to gather it in a heap, wet it gradually with water and keep covering up the sides with sand, like a charcoal pit, and when it has received as much water as will reduce it to powder, then it should be entirely covered with the sand and left undisturbed for about 10 hours. After this it should be mixed with the sand by water as it is required to be used. This we know to be a good plan but it is seldom followed after in our city.—[ED.

An Iron Stomach.

The following story purporting to be an extract from a work published some time since in London, entitled 'The principles of Medical Psychology,' is rather singular, though it appears quite indigestible :

"Urban Fedad was a lunatic confined at Gratz, in Germany, One of his morbid conceptions was, that the stomach must always be strengthened with iron. He was seized with violent inflamation of the œsophagus, which nearly proved fatal. He recovered however as soon as he could speak, asserted that he had swallowed the blade of a knife, which was not credited. In November 1829, he was again taken ill, and died on the third day. On opening the body there were found 7 oxidated lath nails, each 2 1-2 inches long; 33 nails 2 inches long, some blunted by oxidation, some pointed and large, and 49 smaller nails and rivets; 3 pieces of wound up iron wire; an iron screw one inch long; half a knitting needle; two iron tobacco pipe cleaners; a brass hat buckle; part of the blade of a knife 3 inches long, which was quite blunted on the edges and at the point by oxidation; and lastly a roll of lint about the size of a hazelnut. The total number of articles amounted to 100, and weighed about twenty ounces. The stomach was very much drawn down, but not perforated. Judging from the state of oxidation, it was concluded that many of the above named contents had been retained a couple of years in the stomach, and that probably many pieces of iron had passed through this man's body."

Pyramids of Egypt.

The pyramids of Egypt are supposed to be more ancient than 3000 years. The largest of these is 499 feet high, and has 693 feet each side, at its base, the foundation forming an area of 480,000 square feet or 11 acres of ground. The building of the pyramids is supposed to have employed upwards of 300,000 workmen for more than twenty years, and they have always been ranked among the wonders of the world.

TO CORRESPONDENTS.

"E P. G. of R. I."—You had better take our advice and not apply for letters patent.

"T S. M. of Pa."—You have our thanks for your letter and enclosure. We should be glad to receive those samples.

"B. F. B. of Mass."—We will bear your letter in mind, and, if possible, do something for you

"S. H. A. of N Y."—We will endeavor to procure some work for you that will meet your views. We have none on hand just now. We shall write you in the course of two or three weeks in relation to it

"H. & C. C. of Pa."—We shall write you in a few days in regard to the Felloe machine. Urgent business has prevented earlier attention to it.

"H. S. U. of Ind."—We cannot do anything for you at present in regard to that business. There must be some basis for operations—as yet you have furnished none.

"J. Y. S. of Pa."—We will reply to your letter of the 30th ult. in about 10 days, but in the meantime would like definite instructions from you whether we shall proceed with your business or not. Your former letters were received and the amounts enclosed placed to your credit, ($40.)

"C. M of S. C."—Your letter relates to business altogether out of our line; however we shall attend to it as soon as we can spare the time. We suppose you refer to Mr. Wilson's Theodolite, instead of Thompson's. By addressing Mr. W. at Cambridge, Mass., you can ascertain the full particulars in regard to price, &c.

"D. B. of Detroit."—We forwarded a copy of the Condensing Engine Plate by Wells & Co. on the 28th ult. 6 copies of Scientific American sent by mail

"C. A. T. & Co. of Pa., and others."—Messrs W. S. & H J. Tingley, of Pawtucket, R. I. inform us that they have some machines on hand and are constantly manufacturing such as answer the description advertised for in the Scientific American of June 2, called the "Family Spinning Machine."

"A. A. W. of Mich."—Your funds have been received from the Patent Office and placed to your credit.

"R. T. of Tenn. and E. B. of Ind."—We sent your packages of books ten days ago and hope you will receive them in good condition. We were not able to supply them all until that time.

"J. R E. of S. C."—Your books were shipped on board the Southerner last Saturday—hope they have reached you safely.

"C. D. G. of N. Y."—Your model was shipped per Wells & Co.'s Express last Monday.—A letter containing $15 was enclosed in the case with model.

"H. F. P. of Boston." "H. S. of N. H." and R. S. T. of Geo."—A Camera Lucida was shipped to each of your address last Saturday by the various lines specified in your letters.

"A. S. T. of S. C"—The inner part of the tyre moves the fastest surely, because it is of the least diameter. California news, all true. The best road now is round the Cape. In two years more the best road will be over the mountains, a B line from St. Louis.

"D. W. of La."—The balance of the funds received from you after paying Parker's subscription has been placed to your credit. We regret your ill success in obtaining Davis's Manual, but what can we do in the matter? We have fulfilled our duty.

"A. G. H. of Great Falls."—We know of no black paint that can stand perfectly on a hot funnel, but we can give you receipts for the two best that is used.

"D. J. S. of New York."—We know of no Boiler Indicator exactly like the one you have sent us, but you are aware, we suppose, of the many different kinds that have already been brought before the public. There was one patented in 1847, both to give notice by a dial of the water line, and also to operate a whistle at a certain line. Yours appears to be good.

"W. W. of Wilmington, N. C"—We have procured a ticket for you in the "Crescent City," which sails from this port direct for Chagres on the 30th, and one also from Panama to San Francisco, which will leave the former place the last of July. Messrs. H. & A. could not inform us which steamer would be at Panama to make the July trip, but verbally assured us that there would be one there which would take the passengers of the "Crescent City" and "Falcon," if the tickets were purchased here.

"L. T. and J. H. D. of N. Y." "C. M. M. of Pa." "M. P. of Ct." "N. F. T. of O." "R H. F. of N. J" and "B. D. S. of Va."—Your drawings and specifications have been forwarded to the Patent Office since our last issue.

"J. W. C. of Ia."—We shall notice the invention next week.

"D. P. of Albany, N. Y."—If you send us a more full description of the rotary, showing how the steam is cut-off, and how the back pressure of the steam is prevented, we will gladly publish it. The diagram is about the right size—send us two views. These things should be plain.

"A. W. of Me."—Morse's apparatus will cost about $30 for your purposes. A small chemical telegraph could be made for about $10, but a large Telegraph would cost more than $100. House's Telegraph would cost about $500; we should think a first rate one double this price. The other telegraph we do not know about. If you can make the magnet exert the same attractive power at one foot as at two inches distance, cannot you do so at any distance. If you do this, the grand object is attained. Various boiler feeders have been used. The pressure of the steam is not according to the form of the piston but the *area* of pressure (square inches,) the circular form is the best. We do not know about the cork—the experiment could be easily tried.

"M. P. of Ct."—All right now. Your papers have been forwarded to the Patent Office.

"N. G. F. of N. H."—Your Caveat has been filed in the Patent Office and we are now waiting for further advices from you.

"J. S. of Pa."—Your Caveat was forwarded to you for signatures last Wednesday week. Why have you not returned it?

"R. L. of N. Y."—We are waiting impatiently for the return of your specification.—"Hurry it up," and comply with our other request if possible.

"R S. G. of Md."—Come on here and bring your model with you. You need not fear the Cholera. It wont touch you if you are regular in your habits and *strictly* temperate.

"C. K. & Co. of Ohio."—We should have been pleased to have complied with your wishes had your letter been received in season, but it was to late.

"H. M. of N. Y."—We will try and present yours soon.

Solutions to the last problems are laid over till next week.

Advertisements.

For the Scientific American.

Patent Laws.—Action of the Patent Office.—Appeals.

In my last on page 294, I cited a claim to prove that the Patent Office had granted a *patent* for the mere application of a well known article to a purpose for which (perhaps) it had never been used before, and I stated that the Patent Office had rejected many applications of the same nature, upon the ground that no patent could be granted for the mere application of an article. I could produce the names of various individuals who stand in the last catalogue. But there is no necessity for doing this—the fact of such action is known to all who have had any business to transact with the Patent Office. In view of this fact the question arises "how are we to account for such anomalous action?" The writer of this cannot point to this or that favorite suitor and he therefore only points to public testimony. The late decision of Judge Cranch in reference to the contested decision of the Patent Office in the Telegraph case, shows plainly, either a want of correct judgment in the Patent Office or something not so creditable, for it is evident to the most common understanding, that the claims of each (since published) are widely different. Inventors in justice to themselves, require some information upon "what is the subject of a patent, and what is not," and the Patent Office in justice to itself, should publish a schedule of the objects or inventions that are patentable. No person can object to a refusal of a patent for a thing that has been in common use, or is clearly embraced in a patent already granted, or has been described in any work in the name of another author than the applicant. All these reasons for the rejection of a patent will be perfectly satisfactory to the applicant. The course of the Patent Office in examining applications, and rejecting them upon the ground just stated, has been the means of doing much good both to Inventors and the public. While we admit this and many other excellent things and conduct of the officers of the Patent Office, we as firmly believe that much evil has been done to many by wrong decisions of "want of novelty," &c. The public, we believe, has been deprived of the benefit of many good things because the Patent Office refused the discoverer protection upon too hasty a decision. Inventors have the privilege of appealing from the adverse decision of the Commissioner of Patents to the decision of the Chief Justice of the United States Court for the District of Columbia. Many may think that this is remedy enough, but it would just be as easy for a poor inventor to get justice in this way, as it would for him to stop a Mississippi crevasse with a teaspoon. In the first place, the appellant *must dump* down $25, and in the next he must employ an attorney to manage the business in Washington. The cost to him would not be less than from $50 to $100, and if it is an intricate case, it will cost far more than this. And suppose the appellant does gain the point of appeal, not a penny is returned to him. The whole of the expenses whether the decision of the judge is favorable or otherwise, must be paid by the appellant. This is certainly anything but a just law. If the decision is favorable, the expense of the appeal at least should be paid by those who lost the case. In no other part of our judicial statutes, is there such an unjust clause. The vanquished Curatio in every other Court, but our Patent Appeal Court, must relinquish his armor to the victorious Horatio. Such a law is neither founded in justice nor common sense. The salient advantages of evidence to defeat an appellant are all on the side of the Patent Office too. The old Board of Examiners as provided for by the 7th section of the Act of 1836, which required one member at least to be skilful in Art, was abolished in 1839 and a law made which authorised the Commissioner to make all such regulations in taking evidence in contested cases as may be just and reasonable. This law was got up in Mr. Ellsworth's time, under the influence, it is said, of some of the Examiners of that period, because the old Board of Appeal Examiners had reversed more decisions than was consistent with the exalted feeling of the Patent Examiners. It would be well for Inventors, if this act was repealed—the old one was much better, and in every case it would be no more than a simple act of justice to return the appeal fee to the inventor who substantiates his right to *the* patent. A difference of opinion in respect to the claims of an applicant, its infringement upon an existing patent or its similarity to an old invention is something that requires both a critical judgment and much knowledge. That there should be differences of opinion both in the Patent Office and among inventors, is nothing strange, and we must expect such things to take place frequently. When we know that legal tribunals of the highest character, counsel of the most eminent qualifications, and witnesses of undoubted skill and practical knowledge have been sometimes nonplussed in arriving at right conclusions respecting alleged identity in the principle of two inventions, we need not but expect some difficulty in the pathway of inventors in alleged interferences. The other path, however, is perfectly plain to us, viz. the applications and usefulness of objects as being legal subjects of patent protection, where there is no alleged interference. To the discussion of this question we will devote our next article.

JUNIUS REDIVIVUS.

The Striped Bug.

We find in the Vermont Agriculturist the following, recommended as a sovereign remedy for that pest of the melon vines—the striped bug. "Take half a peck of manure from the hen-roost, put it in an old tub or box, and add four gallons of water. In twenty-four hours, by stiring it two or three times, it will be ready for use. Put half a pint of this liquid upon a hill of melons or squashes, and the striped bugs will certainly vanish. At least we have found it so on repeated trials, for several successive seasons. The bugs may not every one vanish on the first trial; and they may re-appear; but we have never had a vine injured after this application. Besides protecting the vines, this liquid is the best of manure, and the application may be frequently repeated, wetting the leaves if a stray bug or two should linger on them, without apprehending any harm. The manure tub will bear to be filled up several times with fresh water.

Marking Sheep.

An agriculturist says, "I wish to impress it upon every one who keeps a flock, if not more than half a dozen, that Venetian red is the best thing I ever saw used to paint mark sheep. It is as most all know, a cheap red paint, only a few cents a pound, and one pound will mark a thousand. Take a pinch of dry powder, and draw the thumb and finger through the wool upon the particular spot you will mark, loosing the powder at the same time, and it will combine with the oil in the wool, and make a bright red mark that rains will never wash out, and which will endure from one shearing to another, but does not injure the wool. It is readily cleansed out by the manufacturer.

The Curculio.

A correspondent of the Genesee Farmer, writing from New Haven, says:—"Last spring I tried another remedy which I had seen recommended; with a half inch augur I bored about two-thirds through the tree, and filled the hole with sulphur, covering it with a plaster grafting wax. This is better than plugging, as the sulphur then comes in contact with the sap. Now for the result; the year before not a plum ripened, but last fall the tree was literally loaded with fine fair fruit. I state the simple facts; others may draw their inferences."

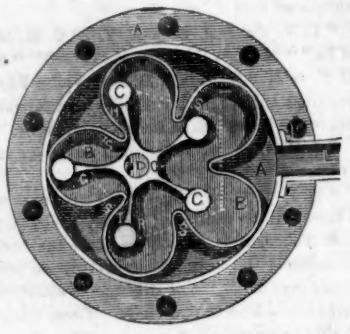
To Preserve Flowers.

Ladies who wish to preserve flowers are recommended to try nitrate of soda. As much as can be held between the thumb and finger placed in the water with flowers, will preserve their freshness and beauty, it is said, for a fortnight.

History of the Rotary Engine.

Prepared expressly for the Scientific American.

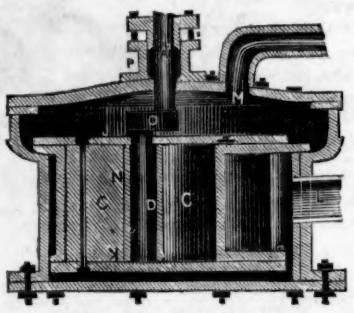
FIG. 64.



GALLOWAY'S ROTARY ENGINE.

This engine is the latest improvement of Elijah Galloway, the most famous inventor of rotaries, and author of a history of the steam engine, to which many additions have been made by Luke Hebert. Fig. 1 is a plan view of the engine with its top removed; fig 2. is a sectional elevation. The same letters refer to like parts; A A, is the cylindrical or outer casing, flanged and bolted together; B B, the receiver or polygonal chamber, having concentric compartments in which the projecting arms of the piston work; C, C, C, roller heads attached to the ends of the arms; D, piston-shaft, which passes through the centre piece, by means of a circular hole or passage, of such a diameter that the shaft, inserted therein can receive a motion suitable for adjusting itself to any action of the piston; O, is a crank coupling the two shafts together, D D, allowing the driving shaft to pass through a gland or stuffing box at the top or cover; F is a shifting key, for the purpose of fixing the shaft and admitting of a certain play to the whole of the parts connected with the working portions within the polygonal chamber: J, is the piston cover, which is a flat piece of metal or dish bolted thereto; K, is another plate of the same construction at the bottom of the piston; L, is the ejection, and M, the eduction valves; N, the slot for the adjusting aforesaid; P, the stuffing-box. The only means of setting out the receiver or concealed chamber, B B, is by causing a polygon, indi-

FIG. 65.



cated by the dotted lines in fig. 1, of the annexed engravings, to be formed, and each concentric chamber struck from the angle, R R, and the smaller circles S S, from the same line as seen. The action of the engine will be understood to be as follows:—When steam or other motive power is admitted into the recesses, H and C, and the opposite sides of the piston open to the eduction valve, the pressure on the piston, by the admission of steam into G H, will cause the arms of the piston to move back by the radius of the crank describing such a circle as to have the effect of passing the piston on the opposite side, having by such a movement caused a semi-revolution of the crank, requiring the pressure from such side to complete one entire revolution of the driving-shaft aforesaid. The steam or the motive power first flows in through the pipe seen in the case on the top of the piston, and is prevented from entering the working-cylinder by the covers J K, except at convenient times; for this purpose small holes are made in the plates through which the steam flows when entering the cylinder; there is a circular channel shown in the top cover, but which are, when viewed from the surface, of sufficient size to allow the piston, as it revolves, to discharge the waste steam up to the last, before taking in other such steam, having done its duty through the cylinder passing off into the outside of the case B, into the space A, and from these into the pipe, B.

Change of Color in Fish.

John on Sporting, says that the change of color in fish is very remarkable, and takes place with great rapidity. Put a living blackburn trout into a white basin of water, and it becomes within half an hour, of a light color. Keep the fish living in a white jar for some days, and it becomes absolutely white; but put it in a dark-colored or black vessel, and although, on first being placed there, the white colored fish shows most conspicuously on the dark ground, in a quarter of an hour it becomes as dark colored as the bottom of the jar, and consequently difficult to be seen. No doubt this facility of adapting this color to the bottom of the water in which it lives is of the greatest service to the fish in protecting it from its numerous enemies. All anglers must have observed that in every stream the trout are very much of the same color as the gravel or sand on which they live; whether this change of color is a voluntary or involuntary act on the part of the fish, I leave it for the scientific to determine.

Sleep for Plants.

Mr. Lindly, a celebrated London professor, says "there is not a single gardener who is master of his profession, who does not know how injurious a high nocturnal temperature is to plants. The coolness of the night is to plants, what sleep is to animals. This law may to some extent be violated for a time, but the plants cannot, under the penalty of loss of life, be deprived of their natural and proper period of repose."

The Weather.

Dr. Forster of Bruges, who is well known as a meteorologist, declares that by the journal of the weather kept by his grandfather, father, and himself, ever since 1767 to the present time, whenever the new moon has fallen on a Saturday, the following 20 days have been wet and windy 17 cases out of 20.

Leeches.

A French medical writer states, that the practice in the Hotel Dieu, when leeches refuse to suck blood, is to wrap them for a few moments in a linen cloth wring out of undiluted wine.

Glass.

At the Polytechnic Institution in London is exhibited one pound of glass, spun by steam into four thousand miles, and woven with silk into beautiful dresses and tapestry.